WHAT IS CLAIMED IS:

1. A four color liquid crystal display comprising:

a plurality of pixels including three primary color pixels and a white pixel, each pixel including a pixel electrode and a switching element;

a plurality of gate lines extending in a row direction for transmitting a gate signal to the switching elements; and

a plurality of data lines extending in a column direction for transmitting data signals to the switching elements,

wherein the white pixel is smaller than the three primary color pixels.

2. The liquid crystal display of claim 1, wherein the three primary color pixels include red, green and blue pixels.

3. The liquid crystal display of claim 2, wherein the green pixel is spaced apart from the white pixel.

4. The liquid crystal display of claim 1, wherein the pixels are arranged in a 2×2 matrix.

5. The liquid crystal display of claim 4, wherein the three primary color pixels include red, green and blue pixels and the blue pixel is larger than the red pixel and the green pixel.

6. The liquid crystal display of claim 5, wherein the blue pixel and the white pixel are arranged in a diagonal direction.

7. The liquid crystal display of claim 1, wherein the pixels are arranged in sequence along the row direction.

8. The liquid crystal display of claim 7, wherein the three primary color pixels include red, green and blue pixels and the red pixel, the green pixel, the blue pixel, and the white pixel are arranged in sequence.

9. The liquid crystal display of claim 1, wherein the three primary color pixels have substantially equal size.

10. The liquid crystal display of claim 1, wherein at least one portion of the gate lines and the data lines located adjacent to the white pixel has a width larger than other portions of the gate lines and the data lines.

11. The liquid crystal display of claim 10, wherein the gate lines intersect the data lines and the at least one portion having the larger width does not intersect other of the gate lines and the data lines.

12. The liquid crystal display of claim 10, wherein at least one of the gate lines and the data lines located adjacent to the white pixel has a width larger than other of the gate lines and the data lines.

13. A device of driving a four color liquid crystal display including a plurality of dots, each dot including red, green, blue, and white pixels, a plurality of gate lines for transmitting gate signals to the pixels, and a plurality of data lines for transmitting data signals to the pixels, the device comprising:

a gate driver supplying the gate signals to the gate lines;

a data driver supplying the data voltages to the data lines; and

an image signal modifier for converting three-color image signals into four-color image signals, optimizing the four-color image signals, and supplying the optimized image signals to the data driver such that the data driver converts the optimized image signals to the data voltages.

14. The device of claim 13, wherein the image signal modifier comprises:

a data converter converting three-color image signals into four-color image signals;

a data optimizer optimizing the four-color image signals from the data converter;

a data output unit supplying the optimized image signals to the data driver in synchronization with a clock; and

a clock generator generating the clock, the data driver operating in synchronization with the clock.

15. The device of claim 14, wherein the optimized image signals (W', R', G', B') for the white, red, green, and blue pixels are determined by:

$W' = \mathrm{Min}(W_0, 255)$;

$R' = R_0 + \mathrm{Max}(0, W_0-255)$;

$G' = G_0 + \mathrm{Max}(0, W_0-255)$; and

$B' = B_0 + \mathrm{Max}(0, W_0-255)$,

where $W_0$ is an achromatic component of the four-color image signals, $R_0$, $G_0$ and $B_0$ are chromatic components of the four-color signals, and Min(x, y) and Max(x, y) are defined as minimum and maximum values between x and y, respectively.

16. The device of claim 14, wherein the optimized image signals (W', R', G', B') for the white, red, green, and blue pixels are determined by:

$$W' = W_0 - (255 - \mathrm{Max}(R_0, G_0, B_0));$$

$$R' = R_0 + (255 - \mathrm{Max}(R_0, G_0, B_0));$$

$$G' = G_0 + (255 - \mathrm{Max}(R_0, G_0, B_0)); \text{ and}$$

$$G' = G_0 + (255 - \mathrm{Max}(R_0, G_0, B_0)),$$

where $W_0$ is an achromatic component of the four-color image signals, $R_0$, $G_0$ and $B_0$ are chromatic components of the four-color signals, and Max(x, y, z) is defined as a maximum value among x, y and z.

17. The device of claim 14, wherein the optimized image signals (W', R', G', B') for the white, red, green, and blue pixels are determined by:

$$W' = (W_0 + \mathrm{Average}(R_0, G_0, B_0))/2;$$

$$R' = R_0 + (W_0 - \mathrm{Average}(R_0, G_0, B_0))/2;$$

$$G' = G_0 + (W_0 - \mathrm{Average}(R_0, G_0, B_0))/2; \text{ and}$$

$$B' = B_0 + (W_0 - \mathrm{Average}(R_0, G_0, B_0))/2,$$

where $W_0$ is an achromatic component of the four-color image signals, $R_0$, $G_0$ and $B_0$ are chromatic components of the four-color signals, and Average(x, y, z) is defined as an average value of x, y and z.

18. The device of claim 14, wherein the data output unit outputs the optimized image signals by group of three optimized image signals.

19. A device of driving a four color liquid crystal display including a plurality of red, green, blue, and white pixels arranged in a matrix, the device comprising:

a gray voltage generator generating a plurality of gray voltages;

an image signal modifier for converting three-color image signals into four-color image signals and selecting one of the three-color image signals and the four-color image signals; and

a data driver converting the selected image signals into data voltages selected from the gray voltages and applying the data voltage to the pixels.

20. The device of claim 19, wherein the image signal modifier comprises:

a data converter converting the three-color image signals into the four-color image signals; and

a data selector for selecting one of the three-color image signals and the four-color image signals based on a predetermined condition.

21. The device of claim 20, wherein the selection of the data selector is based on difference between current image signals and previous image signals.

22. The device of claim 21, wherein the four-color image signals are selected when the difference between the current image signals and the previous image signals is larger than a predetermined value and the three-color image signals are selected when the difference between the current image signals and the previous image signals is equal to or smaller than the predetermined value.

23. The device of claim 20, wherein the selection of the data selector is based on a selection signal from an external device.

24. The device of claim 23, wherein a state of the selection signal is determined by a user.

25. The device of claim 24, wherein the state of the selection signal is determined by operation modes of the liquid crystal display and the operation modes include a normal mode and a TV mode.

26. The device of claim 20, wherein the data selector selects both a group of the three-color image signals and a group of the four-color image signals.

27. The device of claim 26, wherein the liquid crystal display has a PIP (picture-in-picture) function and the selected part of the four-color images signals corresponds to the pixels displaying the PIP.

28. The device of claim 20, wherein the four-color image signals are selected when a supply voltage provided for the liquid crystal display is a DC voltage and the three-color image signals are selected when the supply voltage provided for the liquid crystal display is an AC voltage.

29. The device of claim 20, wherein the image signal modifier further comprises a data optimizer optimizing the four-color image signals from the data converter based on a characteristic of the liquid crystal display and provides the optimized four-color image signals for the data selector.

30. The device of claim 29, wherein the data selector comprises a multiplexer selecting one of the three -color image signals and the four-color image signals based on a selection signal.

31. The device of claim 30, wherein the image signal modifier further comprises a delay unit delaying the three-color image signals for a predetermined time and supplying the delayed three-color image signals to the multiplexer.

32. The device of claim 31, wherein the predetermined time is substantially equal to a time for the three-color image signals to reach the multiplexer through the data converter and the data optimizer.

33. A method of driving a four color liquid crystal display including a plurality of gate lines, a plurality of data lines, and a plurality of red, green, blue, and white pixels arranged in a matrix, the method comprising:

converting three-color image signals into four-color image signals;

optimizing the four-color image signals;

converting the optimized four-color image signals into data voltages;

applying a gate voltage to the gate lines; and

applying the data voltages into the data lines.

34. A method of driving a four color liquid crystal display including a plurality of gate lines, a plurality of data lines, and a plurality of red, green, blue, and white pixels arranged in a matrix, the method comprising:

converting three-color image signals into four-color image signals;

selecting one of the three-color image signals and the four-color image signals;

converting the selected image signals into data voltages;

applying a gate voltage to the gate lines; and

applying the data voltages into the data lines.

35. The method of claim 34, further comprising:

optimizing the four-color image signals before the signal selection; and

delaying the three-color image signals for a predetermined time before the signal selection.